KUPRIEVICH, N.F.

Stellar scintillation and its compensation during the photoelectric registration of stellar spectra. Astron.zhur.33 no.3:348-367 My-Je '56. (MLRA 9:10)

1.Glavnaya astronomicheskaya observatoriya Akademii nauk SSSR
(Stars--Spectra) (Spectrophotometry)

MEL'NIKOV, O.A.; KUPREVICH, N.F.

Using the photoelectric method for a new determination of the zero point of spectrophotometric gradients and stellar temperatures[with summary in English]. Astron.zhur.33 no.6:845-849 N-D '56.
(MLRA 10:1)

1. Glavnaya astronomicheskaya observatoriya Akademii nauk SSSR.
(Photoelectricity) (Spectrophotometry) (Stars--Temperature)

63. Television Technique in Astronomical Observations

"Application of Television Techniques at the Pulkovo Observatory for the Intensification of Light for Astronomical Observations," by N. F. Kuprevich. Astron. Tsirkulyar., No 171, 5 Jul 56, pp 12-13 (from Referativnyy Zhurnal -- Astronomiya i Geodeziya, No 5, May 57, Abstract No 3517)

The Pulkovo Observatory uses the supersensitive transmitting television tube Orticon with 625-line scanning. Experimental pictures of the moon were taken. The optical part of the equipment has an objective 70 mm in diameter with a 7.5-m focal length. The illumination of the moon on the input of the television tube is 0.05 lux. The dimensions of the screen are 180 x 240 mm. The equivalent moon diameter on the screen is 650 mm. (U)

Item #1451

3(1); 6(6) PHASE I BOOK EXPLOITATION SOV/3334

Kuprevich, Nikolay Fedorovich

Televizionnaya tekhnika v astronomii (Television Techniques in Astronomy) Moscow, Gosenergoizdat, 1958. 39 p. (Series: Massovaya radiobiblioteka, vyp. 313) 30,500 copies printed.

Ed.: F.I. Tarasov; Tech. Ed.: N.I. Borunov; Editorial Board: A.I. Berg, F.I. Burdeynyy, V.A. Burlyand, V.I. Vaneyev, Ye.N. Genishta, I.S. Dzhigit, A.M. Kanayeva, E.T. Krenkel', A.A. Kulikovskiy, A.D. Smirnov, F.I. Tarasov, and V.I. Shamshur.

PURPOSE: This booklet is intended for radio amateurs.

COVERAGE: The author discusses the possibilities of using television equipment for astronomical observations. He briefly outlines the developments in astronomical equipment and methods of observation and describes in detail electronic equipment used in astronomy today. No personalities are mentioned. There are no references.

Card 1/ 3

Television Techniques (Cont.)

TABLE OF CONTENTS: SOV/3334

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Television Techniques (Cont.) SOV/3334

Prospects of Further Development of Television Techniques in Astronomy

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AVAILABLE: Library of Congress (TK 6630 .K76)

Card 3/3

JP/jb
4-5-60

SOV-26-58-3-8/51

AUTHOR: Kuprevich, N.F., Candidate of Physico-Mathematical Sciences

TITLE: Television Technique in Astronomy (Televizionnaya tekhnika v astronomii)

PERIODICAL: Priroda, 1958, Nr 3, pp 50-54 (USSR)

ABSTRACT: The Pulkov skaya observatoriya (Pulkovo Observatory) has made fast-exposure photographs of the surface of the moon and other planets by aid of an electron-optical converter with a fluorescent 35-mm-screen and an accelerating tension of 20,000 volts. The photograph is taken from the image of this television setup. The brief time of exposure, which is reduced by 4 to 6 times, as compared with conventional astronomic photography, is very much suitable for small diameter telescopes and furnishes clear-cut pictures not blurred by atmospheric disturbances. The number of standard television scanning lines, 625, prevents a reduction of exposure time to 1/100 second, although the image proper would be bright enough. In the Pulkovo Observatory, the photographs were taken on a horizontal solar telescope in the autumn of 1956.

There are 3 photos, 4 diagrams and 1 Soviet reference.

Card 1/2

1/1 Main Astronomical Observatory, AS USSR, Pulkovo

26-58-5-15/57

AUTHOR: Kuprevich, N.F., Candidate of Physico-Mathematical Sciences (Pulkovo)

TITLE: The Application of Electronic Methods in Astrospectroscopy (Primeneniye elektronnykh metodov v astrospektroskopii)

PERIODICAL: Priroda, 1958, Nr 5, p 74 (USSR)

ABSTRACT: The article deals briefly with foreign application of electronic methods in the photography of stellar spectra in the near infrared range.
There are 3 references, 1 of which is Soviet, 1 Canadian and 1 American.

AVAILABLE: Library of Congress

Card 1/1 1. Steller spectra - Photography 2. Spectroscopy - USSR
3. Photography - Applications

KUPREVICH, M. [Kuprevych, M.], kand.fiz.-mat.nauk

Outer space on a televisor's screen. Znan.ta pratsia no.1:26 Ja '59. (MIRA 12:10)
(Television in astronomy)

88928

3.1200

S/035/61/000/001/003/019
A001/A001

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1961, No. 1, pp. 17 - 18, # 1A168

AUTHOR: Kuprevich, N.F.

TITLE: The Television Method of Observing Deformations of Stellar Images

PERIODICAL: "Tr. Soveshchaniya po issled. mertsaniya zvezd", 1958, Moscow-Leningrad, AN SSSR, 1959, pp. 239-246. Discus. pp. 250-256

TEXT: The author points out advantages of the photoelectric method for recording deformations of stellar images; low inertness, rectilinear relation between the light flux on the photo-cathode of the light receiver and its photocurrent. A disadvantage of this method is impossibility of distinguishing between the signals of image scintillation from its tremor. Moreover, the photocathode does not respond to brightness variations but only to the variations of the light flux. Thus the conventional photoelectric method of observation can not basically reflect fully actual changes in the brightness distribution and the nature of stellar image deformations. In the photographic method of recording, image tremor amplitudes

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S/035/61/000/001/003/019
A001/A001

The Television Method of Observing Deformations of Stellar Images

on the photoplate do not exceed tens or hundreds of microns. Recording of scintillations is possible only in the region of low frequencies of variations in the image brightness. All deformations of the image can be recorded by the photographic method, if the object is sufficiently bright, since the plate responds to changes of brightness and not of the light flux. The author points out employment of television technique as light amplification, which can considerably increase the sensitivity of the photographic observation method. In an experimental television telescope, constructed at the Pulkovo Observatory in 1958, a sensitive transmitting television tube of the superarthikon ЛИ17 (LI17) type was used as a light receiver. In 1958 experimental studies were conducted on photographing the Moon and bright stars with an exposure of 1/50 sec from the television receiver screen. Equivalent focus, corresponding to the maximum scale of image on the television screen (kinescope), amounts to 1,062 m (optical focus of the telescope is 125 m, electronic image magnification is 8.5X. The optical diagram (Cassegrain type) of the telescope is presented. The telescope focus length can be varied within wide limits: 9.5; 18; 56, and 125 m. A special television camera with a LI17 tube is mounted on the telescope installed in the temporary pavilion. The block-diagram of the

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A001/A001

The Television Method of Observing Deformations of Stellar Images

television telescope is presented. The output signal is amplified after the photocathode LI17. Further images are fed to three television receivers: the image is photographed from one of them, the image quality is checked on the second one, and the third receiver is used for the checking of telescope focusing. The equipment is provided with rectifiers and a voltage stabilizer. Television sets are provided with their own supply units and voltage stabilization units. The application of a block-synchronous electronic shutter makes it possible to photograph, with an exposure of 1/50 sec, the kinescope screen with a small camera at transmitting only one frame of the image. The block-diagram of the equipment of the television telescope is shown, Several negatives of images of the α Tau star ($z = 44^{\circ}$) are presented with time intervals between individual frames of 10 - 15 sec and between individual photographs of about one hour. The optical focus of the telescope is equal to 125 and 56 m. The diameter of the image on the television screen amounts to 15 mm, which corresponds to the total equivalent focus of the telescope $\sim$ 1,062 and 475 m. On photographs are recorded the instants of the formation of the complicated structure of the star image with diameter d_2 lesser than theoretical one and the instants of the formation of a uniformly illuminated disk of the star

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A001/A001

The Television Method of Observing Deformations of Stellar Images

image with a diameter exceeding the d_2 value. The author notes that at an exposure of 1/50 sec and a focus of 1,062 m, it is impossible to photograph the image of a star by the usual method on a plate, because of the low sensitivity of photo emulsions. He notes also that deformations of stellar images are due to air turbulence in the terrestrial atmosphere, but not due to local mechanical or other disturbances. Figures characterizing light amplification produced by the television system are cited. The author points out that sensitivity of the plates should be increased by 5 to 10 times, at their equal exposures, to obtain the normal density of the negative. He concludes that the application of cinema camera to photographing stellar images from the kinescope screen furnishes greater information on their heterogeneities than individual photographs taken with an ordinary camera. The employment of photometric methods may furnish a sufficiently detailed picture of instantaneous distribution of light energy on the disk of the stellar image. There are 7 references.

A. Darchiya

Translator's note: This is the full translation of the original Russian abstract.

Card 4/4

KUPREVICH, N. F.

"Television-Astronomical Observations At The Pulkovo Observatory,"

paper presented at IAU Symposium on the Moon, Leningrad, USSR, 6-8 Dec. 60.

Experimental work on the application of television technique in observational astronomy carried out at the Pulkovo Observatory is described. Examples of photographs of the lunar image obtained from the screen of the kinescope are given. Data are given on studies of the simultaneous registration of the form of a stellar image and the light flow, which vary due to atmospheric interference. A conclusion is made on the possibility of using a fast shutter before the photoplate in order to eliminate atmospheric interference. This shutter is operated by the photocurrents of the photomultiplier.

DERVIZ, T.Ye.; KUPREVICH, N.F.; MITROFANOVA, L.A.

Preliminary results of measuring changes in line intensities in the solar spectrum depending on the period of solar activity. Astron.tsir. no.213:4-5 Jl '60. (MIRA 14:1)

1. Glavnaya astronomicheskaya observatoriya AN SSSR.
(Spectrum, Solar)

20368
S/058/61/000/003/005/027
A001/A001

6.6000

Translation from: Referativnyy zhurnal, Fizika, 1961, No. 3, p. 227, # 3G125

AUTHOR: Kuprevich, N. F.

TITLE: The Experimental Television Telescope of the Pulkovo Observatory

PERIODICAL: "Izv. Gl. astron. observ. v Pulkove", 1960, Vol. 21, No. 4, pp. 133-165 (English summary)

TEXT: The author describes the optical part of the experimental television telescope of the Cassegrain type with the diameter of the input aperture of 285 mm and the focal length of 9.5 - 125 m. The block-diagram of the television installation is presented which is designed for clearness of image transmission of 625 lines in scanning the line sweep at 50 frames per sec. The problem of the selection of the necessary number of sweep lines is considered for different focal lengths of the telescope. The author describes the design and operational principle of the transmission television tube of the superothicon type and some electronic circuits of the equipment employed. He reports on the results of the first experiments on observations with the aid of the television telescope, on photographing the Moon from the screen of the televisor (18 m optical focus), and

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A001/A001

The Experimental Television Telescope of the Pulkovo Observatory

on distortions of stellar images (125 m optical focus). The results are presented of experiments on increasing the time of storing the image, as a potential relief, on the target of the superorthicon from 1/50 to 5 sec.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

42986

3.1220
3.1240

S/035/62/000/011/014/079
A001/A101

AUTHOR: Kuprevich, N. F.

TITLE: Simultaneous television registration of the luminous flux of a star and the shape of its image at its scintillation

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 11, 1962, 24 - 25, abstract 11A185 ("Izv. Gl. astron. observ. v Pulkove", 1961, v. 22, no. 4, 58 - 64; English summary)

TEXT: The Main Astronomical Observatory, AS USSR, conducted in 1960 experiments on simultaneous television registration of the luminous flux of a star and the shape of its image, varying in time on account of atmospheric turbulence. The purpose of experiments was to reveal a correlation between these two phenomena. An experimental television telescope (mirror diameter, 285 mm; equivalent optical focus in the Cassegrain system, 56 m) equipped with a commercial television set ПТУ -3 (PTU-3) and units of television apparatus described earlier (RZhAstr,* 1961, 6A172) were used for the study. Luminous flux producing the star image is divided, after passing the telescope, into two channels by

Card 1/3 * S/035/61/000/006/[illegible]

Simultaneous television registration of the... 5/035/62/000/011/014/079
A001/A101

means of a light-dividing mirror. 50% of light is used to produce the image of the star on the photocathode of a superorthicon transmission tube and forms the first channel. Other 50% of light is incident, upon reflection from the mirror, onto the photocathode of a multiplier; photocurrents of the latter, after amplification in a d.-c. circuit, are fed into deflection plates in the electron-ray tube of an OC-7 (EO-7) oscillograph. The oscillogram of the photocurrent is formed then on its screen, synchronized with the frequency of frames of television systems. The image of this photocurrent oscillogram is projected, by auxiliary optical arrangement, onto the photocathode of the second superorthicon mounted in the PTU-3 apparatus. Output signals of the first and second superorthicons are fed, after amplification, into an electronic commutation unit and then to the controlling electrode of a kinescope. Two images are formed on the kinescope screen transmitted by two television channels. The star image occupies the screen upper part, and its lower part reproduces the curve of photocurrent from the photomultiplier. Images from the kinescope screen are photographed by either a "Kiyev" camera (1 : 1.5) with exposure of 1/25 or 1/50 sec or filming camera with a speed of 25 frames per sec. In both cases the filming speed is synchronized with the frequency of television system frames. The

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Simultaneous television registration of the... S/035/62/000/011/014/079
A001/A101

photographs obtained did not reveal any noticeable correlation between the photocurrent (consequently, and luminous flux) and the shape of the star image at its scintillation. The block-diagram of equipment is presented, as well as a number of photographs of the images obtained from the kinescope screen during observations.

N. K.

[Abstracter's note: Complete translation]

Card 3/3

DERVIZ, T.Ye.; KUPREVICH, N.F.; MITROFANOVA, L.A.

Results of measurements of spectrum line intensities of the sun in relation to the phase of solar activity. Astron.zhur. 38 no.3:448-454 My-Je '61. (MIRA 14:6)

1. Glavnaya astronomicheskaya observatoriya AN SSSR.
(Sun) (Spectrum, Solar)

KUPREVICH, N.F., starshiy nauchnyy sotrudnik, kand.fiziko-matematicheskikh nauk

Moon on the screen of a television telescope. Nauka i zhizn' 29 no.11:66-68 N '62. (MIRA 16:1)

1. Glavnaya astronomicheskaya observatoriya AN SSSR v Pulkove.
(Television in astronomy)
(Moon--Photographs, maps, etc.)

3.1260
3.1239

S/033/62/039/006/024/024
E032/E314

AUTHOR: Kuprevich, N.F.

TITLE: Experiments on the photography of the Moon at the Pulkovo Observatory in the wavelength range 0.8-2.3 μ

PERIODICAL: Astronomicheskiy zhurnal, v. 39, no. 6, 1962, 1136 - 1138

TEXT: These experiments were carried out at the Pulkovskaya observatoriya (Pulkovo Observatory) in May, 1962, using a television system and an infrared vidicon. The aim was to obtain an infrared photograph of the luminous rays in the region of the Sea of Nectar and the Tycho crater. The television image was photographed on a 35 mm film with an exposure of 1/25 sec. The ИКС-1 (IKS-1) filter (3 mm) was set up in front of the television tube which had a transmission maximum between 1 and 2.6 μ. The vidicon-filter combination had a maximum sensitivity at about 1.2 μ. The sensitivity fell to 5% at 2.3 μ. Owing to unfavourable observational conditions, the experiments were carried out using the primary focus of the experimental telescope (Izv.Gl.astron. observ. v Pulkove, no. 163, 133, 1960) having a parabolic mirror

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of 28.5 cm diameter and a focal length of 160 cm. A 625 line standard was employed at 25 frames/sec. A typical photograph is reproduced and compared with a photograph recorded in visible light. It is concluded that the infrared image gives rise to a better contrast and may therefore be used to study surface details which are not clear in normal photographs. It is emphasised that the infrared technique is a very promising one and that work is proceeding with a view to setting up an infrared vidivon at the Cassegrain focus, which will give a larger and better-quality image on the television screen. It is intended to carry out parallel and simultaneous observations in the infrared and in the visible, using a normal astrograph or the 26" Pulkovo refractor. There are 2 figures.

ASSOCIATION: Glavnaya astronomicheskaya observatoriya Akademii Nauk SSSR (Main Astronomical Observatory of the Academy of Sciences, USSR)

SUBMITTED: June 6, 1962

MEL'NIKOV, O.A.; KUPREVICH, N.F.; ZHUKOVA, L.N.; POPOV, V.S.

Determination of the spectrophotometric gradients of A-type stars by the photoelectric method. Izv.GAO 23 no.2:66-71 '63.
(MIRA 16:12)

ACCESSION NR: AT4012203 S/2797/63/023/002/0072/0075

AUTHOR: Mel'nikov, O.A.; Kuprevich, N.F.; Zhukova, L.N.

TITLE: Photoelectric photometry of the K and H CaII lines in the spectra of the full solar disk and its central region

SOURCE: Pulkovo. Astron. observ. Izvestiya, v. 23, no. 2(173), 1963, 72-75

TOPIC TAGS: astronomy, photoelectric photometry, photometry, solar disk, solar spectrum, solar telescope

ABSTRACT: In order to study the solar disk, an automatic diffraction spectrograph was mounted on a horizontal solar telescope. The surface of the diffraction grating was 80 x 70 mm, 600 lines per mm. For the collimator, a camera was used with a 200 mm spherical mirror and for recording, a polished oscillograph. The speed of the movie film was 20 mm/sec. The three successive recordings which were made were all similar. Theoretical line profiles were computed, using precise formulas. In the central parts of the K line, agreement was found for the number of atoms from 1.0 to 2.5 • 10^{18} per gram of solar matter. Central residual intensities, in particular of the K line, indicate that E≈0.022 is independent of the calcium atom abundance. A comparison of the K CaII line pro-

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ACCESSION NR: AT4012203

file in the total flux with the center part of the solar disk indicates that lines averaged over the disk are broader in the wings and narrower in the central part of the disk. This corresponds to the profile variations of a given line in the entire solar disk. This problem is of great importance in the comparison of line profiles in the sun and G2V type stars. Orig. art. has: 5 figures, 1 table and 2 formulas.

ASSOCIATION: Glavnaya astronomicheskaya observatoriya AN SSSR, Pulkovo (Main Astronomical Observatory AN SSSR)

SUBMITTED: 00

DATE ACQ: 27Feb64

ENCL: 00

SUB CODE: AA

NO REF SOV: 002

OTHER: 003

Card 2/2

KUPREVICH, N.F.

AID Nr. 972-22 21 May

TELEVISION TELESCOPE (USSR)

Kuprevich, N. F. Priroda, no. 4, 1963, 90-93. S/026/63/000/004/003/005

A television telescope employing an infrared vidicon designed by N. L. Artem'yev was used to obtain infrared photos of the moon in May-June 1962 at the Pulkovo Observatory. The optical part of the telescope consisted of a concave parabolic mirror with a diameter of 285 mm and focal length of 1.6 m. The ИКС-1 optical filter, opaque to wavelengths from 0.4 to 0.8 μ and transparent to those greater than 0.8 μ, was used. Images from the main picture tube were photographed by a "Kiyev" camera on film with a sensitivity of 45-60 ГОСТ units. Work is now in progress at Pulkovo to increase the resolving power and sensitivity of the television tubes, as well as the focal length of the television telescope. A block diagram of the apparatus is given.

[DM]

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ACCESSION NR: AT4012204 S/2797/63/023/002/0110/0114

AUTHOR: Kuprevich, N. F.

TITLE: Experiments in television photography of the moon in the region of wavelengths 0.8-1.1 and 0.8-2.3 microns

SOURCE: Pulkovo. Astron. observ. Izvestiya, v. 23, no. 2(173), 1963, 110-114

TOPIC TAGS: astronomy, moon, image converter, lunar surface, lunar photography, cesium oxide photocathode, superorthicon, infrared television, camera tube, television telescope, Cassegrainian system, infrared vidicon, kinescope

ABSTRACT: The first observations of the lunar surface in the spectral region 0.8-2.3 microns with a television system are described. The infrared photographs obtained in these experiments are compared with those obtained earlier by other investigators in the visible region of the spectrum. The merits and shortcomings of image converters and various kinds of television and infrared apparatus are discussed. With an increase in wavelength in the infrared region of the spectrum there is an increase of photograph contrast and new details are perceptible on the lunar surface, never detected on ordinary photographs. It is postulated that the increase in contrast and appearance of new detail can be attributed to a decrease of

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ACCESSION NR: AT4012204

lunar luminescence in infrared rays. The observations described were made at the Pulkovo Observatory during the period May-June 1962 using two types of camera tube: a) a superorthicon with a cesium oxide photocathode and a 3-mm IKS-1 filter, the effective spectral region at the level of 5% of maximum sensitivity was approximately 0.8 to 1.14 microns, with a maximum at 0.8 micron; b) an infrared vidicon with a 3-mm IKS-1 filter; the spectral region at the level of 3% of the maximum was from 0.80 to 2.3 microns, with a maximum sensitivity at $\lambda \simeq$ 1.2 micron (the spectral characteristic curves are shown in Enclosures). A Cassegrainian system was used with the superorthicon. A series of photographs, comparing various parts of the lunar surface in the visible and infrared regions, accompanies the text. "The author wishes to thank L. N. Gubanov for assistance in assembly of the apparatus, making observations and preparing the photographs". Orig. art. has: 6 figures.

ASSOCIATION: Glavnaya astronomicheskaya observatoriya, Pulkovo (Main Astronomical Observatory)

SUBMITTED: 00 DATE ACQ: 27Feb64 ENCL: 02

SUB CODE: AS NO REF SOV: 004 OTHER: 003

Card 2/2

L 19693-63 EWT(1)/FCC(w)/BDS/ES(v) AFFTC/ESD-3 Pe-4/Po-4 GW

ACCESSION NR: AP3007740 S/0033/63/040/005/0889/0896

AUTHOR: Kuprevich, N. F.

TITLE: New information on the structure of the lunar surface

SOURCE: Astronomicheskiy zhurnal, v. 40, no. 5, 1963, 889-896

TOPIC TAGS: moon, lunar surface, infrared photography, television telescope, infrared vidicon, lunar photography, lunar surface structure, vidicon

ABSTRACT: Infrared photos of the moon taken in the 0.8—2.3-μ spectral range at the Pulkovo Observatory by means of an infrared (IR) vidicon with a silicon filter have been found to show a more detailed lunar surface structure than photos of the same areas taken by Kh. I. Potter in the visual region at the Main Astronomical Observatory of the Academy of Sciences SSSR. The surface structures of almost all the lunar seas as seen in IR are covered by a complex pattern of intersecting mountain ranges and crater chains. These features are not seen in photos taken in the visual region. IR photography does not support the contention of a dust-covered lunar surface. The

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L 19693-63
ACCESSION NR: AP3007740

32

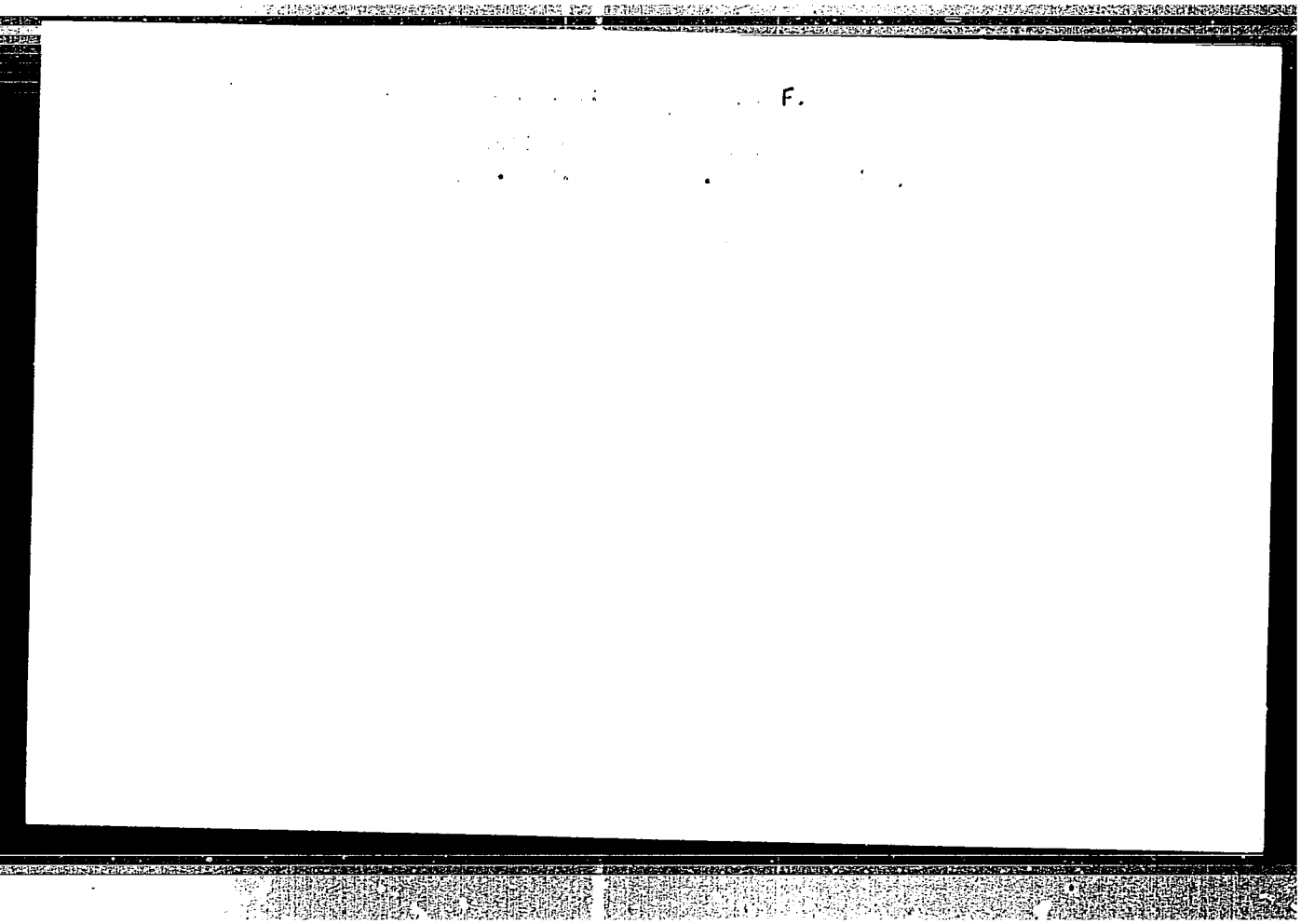
heightened contrasts characteristic of IR photos are attributed to 1) a decrease in the luminescence of some formations in IR, 2) a possible increase of the reflecting power of some formations in IR, and 3) the possible presence of scattered light in the visual region of the spectrum, resulting in a masking effect. It is proposed that special television tubes be developed to permit lunar photography in the 2—2.5-μ range and higher, i.e., in the region where there are windows of spectral transparency in the earth's atmosphere. "The author thanks N. L. Artem'yev and L. N. Gubanova for their help in the photographic work." Orig. art. has: 8 figures.

ASSOCIATION: Glavnaya astronomicheskaya observatoriya Akademii nauk SSSR (Main Astronomical Observatory, Academy of Sciences SSSR)

SUBMITTED: 26Jan63 DATE ACQ: 220ct63 ENCL: 00

SUB CODE: AS NO REF SOV: 004 OTHER: 002

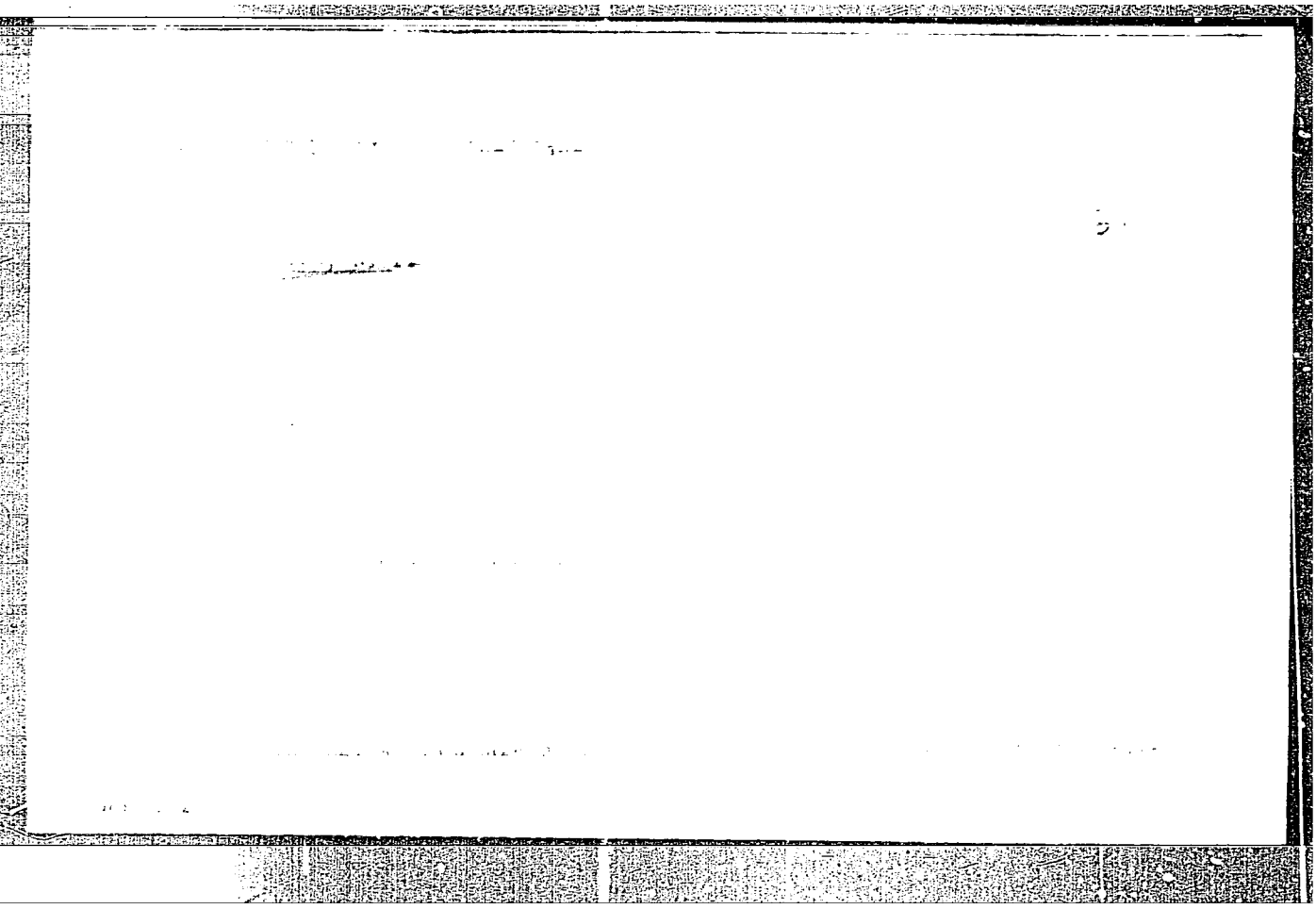
Card 2/2



KUPRIYICH, N.F.

Some photoelectric and television methods for eliminating atmospheric turbulence interferences during astronomical observations. Izv. GAO 23 no.5:144-154 '64.

(MIRA 17:11)



ASSOCIATION: none

ENCL: 00

OTHER:

L 10316-66 EWT(1) GS/GW

ACC NR: AT6003702 SOURCE CODE: UR/0000/65/000/000/0005/0009

AUTHORS: Mel'nikov, O. A. (Corresponding member AN SSSR); Lenzauer, G. G.; Kuprevich, N. F.

ORG: none

TITLE: Astronomical chromatic refraction in connection with guiding large telescopes

SOURCE: AN SSSR. Astronomicheskiy sovet. Opticheskaya nestabil'nost' zemnoy atmosfery (Optical instability of the earth's atmosphere). Moscow, Izd-vo Nauka, 1965, 5-9

TOPIC TAGS: light refraction, ~~astronomy~~, astronomic telescope, spectrophotometric analysis

ABSTRACT: It is shown that refraction at a given wavelength--"chromatic refraction"--depends ultimately on the standard air refractive index. The latter is not easily measured, however, and determinations by different authors vary widely. The refraction of a given star depends on the energy distribution in its spectrum and on the spectral sensitivity of the radiation detector. It is best to use isophotic wavelengths, and these have been computed for a number of temperatures, along with spectrophotometric gradients. The formula for computing these gradients is given. By knowing deviations in the gradients, deviations in isophotic wavelengths may be computed, hence the corresponding refractive index, and thus the chromatic refraction.

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- L 0318-66
ACC NR: AT6003702

2

Computations show a linear relationship between spectrophotometric gradient and standard air refraction. Tables are given to show these variations and also to provide corrections for the combined effect of selective absorption and atmospheric dispersion and to indicate rate of change in length of the atmospheric spectrum (in seconds of arc or millimeters per hour). Results show that differential chromatic refraction may be significant and should be considered in guiding long-wave telescopes. Orig. art. has: 2 figures, 5 tables, and 8 formulas.

SUB CODE: 03/7/ SUBM DATE: 15May65/ ORIG REF: 003/ OTH REF: 005

astronomy 12,55

Card 2/2 BC

KUPREVICH, G.A.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 1954)

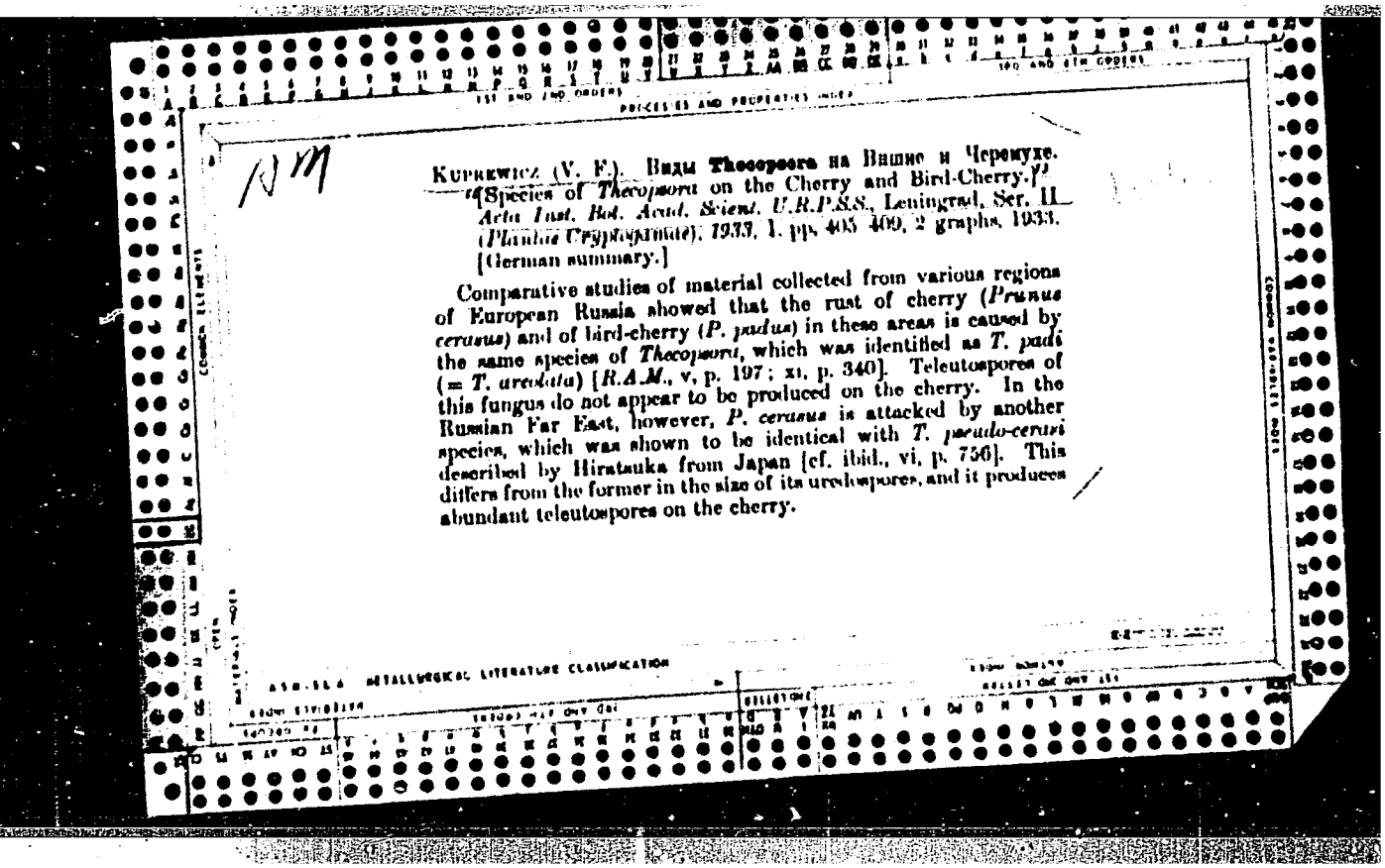
Name	Title of work	Nominated by
Mel'nikov, O.A.) Kuprevich, N.F.)	Works on the spectrophotometry of stars and the photoelectric registration of stellar spectra	Main Astronomical Observatory, Academy of Sciences USSR

SO: Vechernyaya, 7 July 1954

KUPREVICH, V.

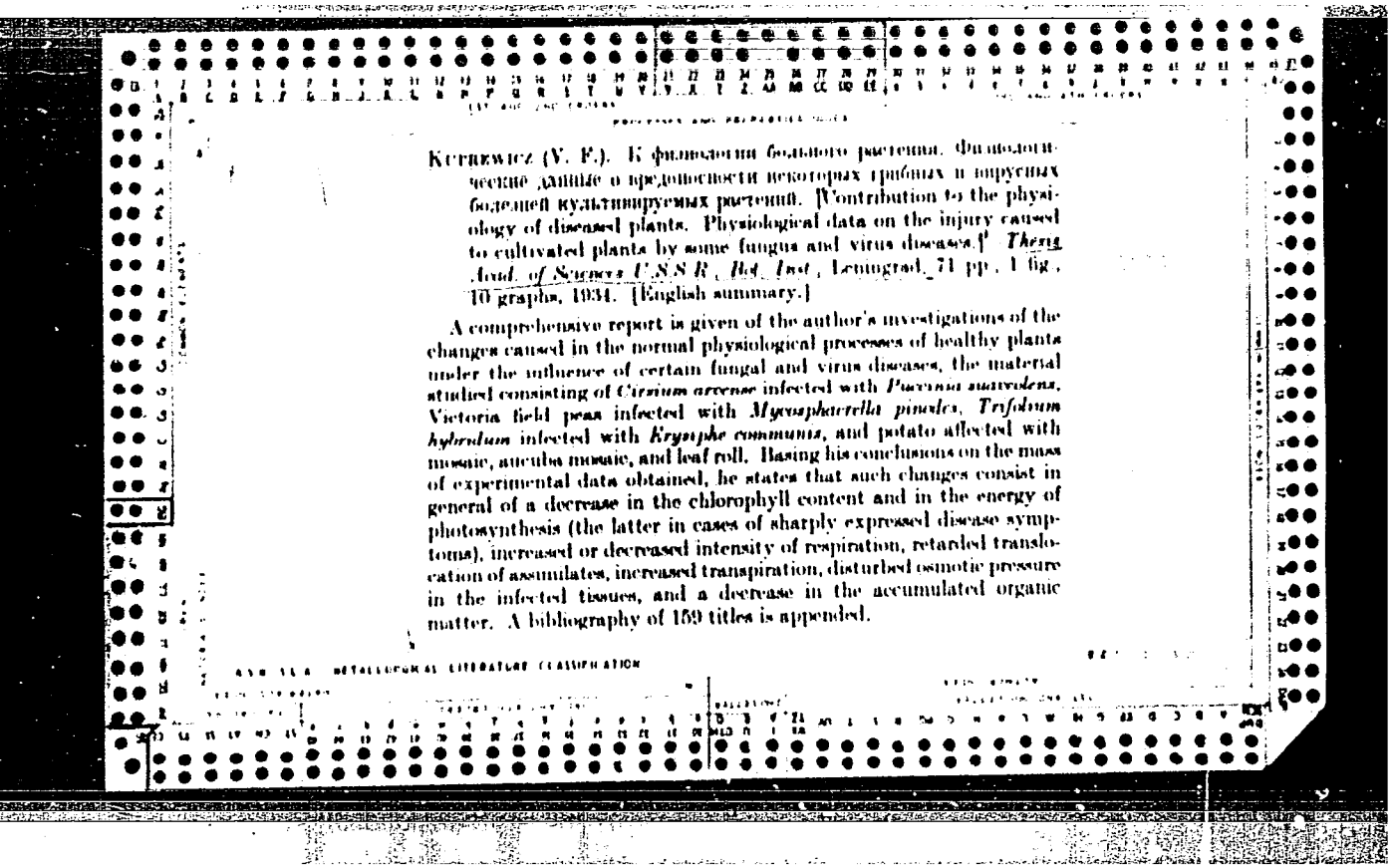
Emergence of combustible gas in Lake Devino. Dokl.AN BSSR 4 no.9:390-392 S '60. (MIRA 13:9)

1. Akademiya nauk BSSR.
(Devino, Lake--Methane)



Kupkewicz (V. F.). **Виды Thecopsora на Вишне и Черемухе.** [Species of *Thecopsora* on the Cherry and Bird-Cherry.] *Acta Inst. Bot. Acad. Scient. U.R.P.S.S.*, Leningrad, Ser. II (*Plantae Cryptogamae*), 1933, 1, pp. 405-409, 2 graphs, 1933. [German summary.]

Comparative studies of material collected from various regions of European Russia showed that the rust of cherry (*Prunus cerasus*) and of bird-cherry (*P. padus*) in these areas is caused by the same species of *Thecopsora*, which was identified as *T. padi* (= *T. areolata*) [*R.A.M.*, v, p. 197; xi, p. 340]. Teleutospores of this fungus do not appear to be produced on the cherry. In the Russian Far East, however, *P. cerasus* is attacked by another species, which was shown to be identical with *T. pseudo-cerasi* described by Hiratsuka from Japan [cf. ibid., vi, p. 756]. This differs from the former in the size of its uredospores, and it produces abundant teleutospores on the cherry.



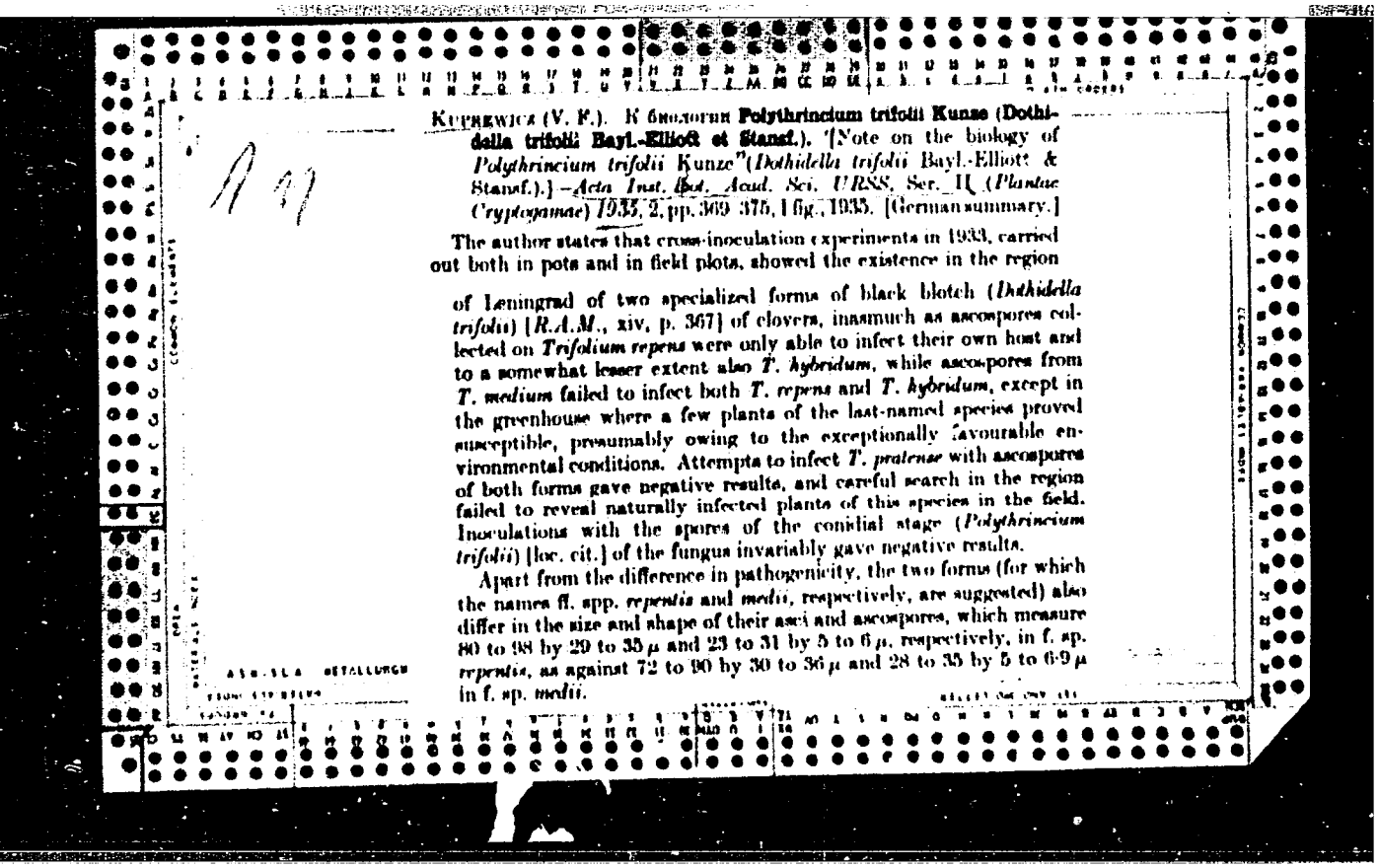
Kernkwicz (V. F.). К физиологии больного растения. Физиологические данные о вредоносности некоторых грибных и вирусных болезней культивируемых растений. [Contribution to the physiology of diseased plants. Physiological data on the injury caused to cultivated plants by some fungus and virus diseases.] *Theog. Acad. of Sciences U.S.S.R., Bot. Inst.*, Leningrad, 71 pp., 1 fig., 10 graphs, 1934. [English summary.]

A comprehensive report is given of the author's investigations of the changes caused in the normal physiological processes of healthy plants under the influence of certain fungal and virus diseases, the material studied consisting of *Cirsium arvense* infected with *Puccinia suaveolens*, Victoria field peas infected with *Mycosphaerella pinodes*, *Trifolium hybridum* infected with *Erysiphe communis*, and potato affected with mosaic, aucuba mosaic, and leaf roll. Basing his conclusions on the mass of experimental data obtained, he states that such changes consist in general of a decrease in the chlorophyll content and in the energy of photosynthesis (the latter in cases of sharply expressed disease symptoms), increased or decreased intensity of respiration, retarded translocation of assimilates, increased transpiration, disturbed osmotic pressure in the infected tissues, and a decrease in the accumulated organic matter. A bibliography of 159 titles is appended.

KUPREVICH, V. F.

KUPREVICH, V. F. Tasks and Methods of Studying Diseases of Agricultural Plants, Publishing House of the Belorussian Academy of Science, Minsk, 1955, 52 pp. 464 K962T.

So: SIRA SI-90-53, 15 Dec. 1953



Kupriewicz (V. F.). К биологии **Polythrincium trifolii Kunze (Dothidella trifolii Bayl.-Elliott et Stansf.).** [Note on the biology of *Polythrincium trifolii* Kunze" (*Dothidella trifolii* Bayl.-Elliott & Stansf.).] —*Acta Inst. Bot. Acad. Sci. URSS*, Ser. II (*Plantae Cryptogamae*) *1935*, 2, pp. 369-375, 1 fig., 1935. [German summary.]

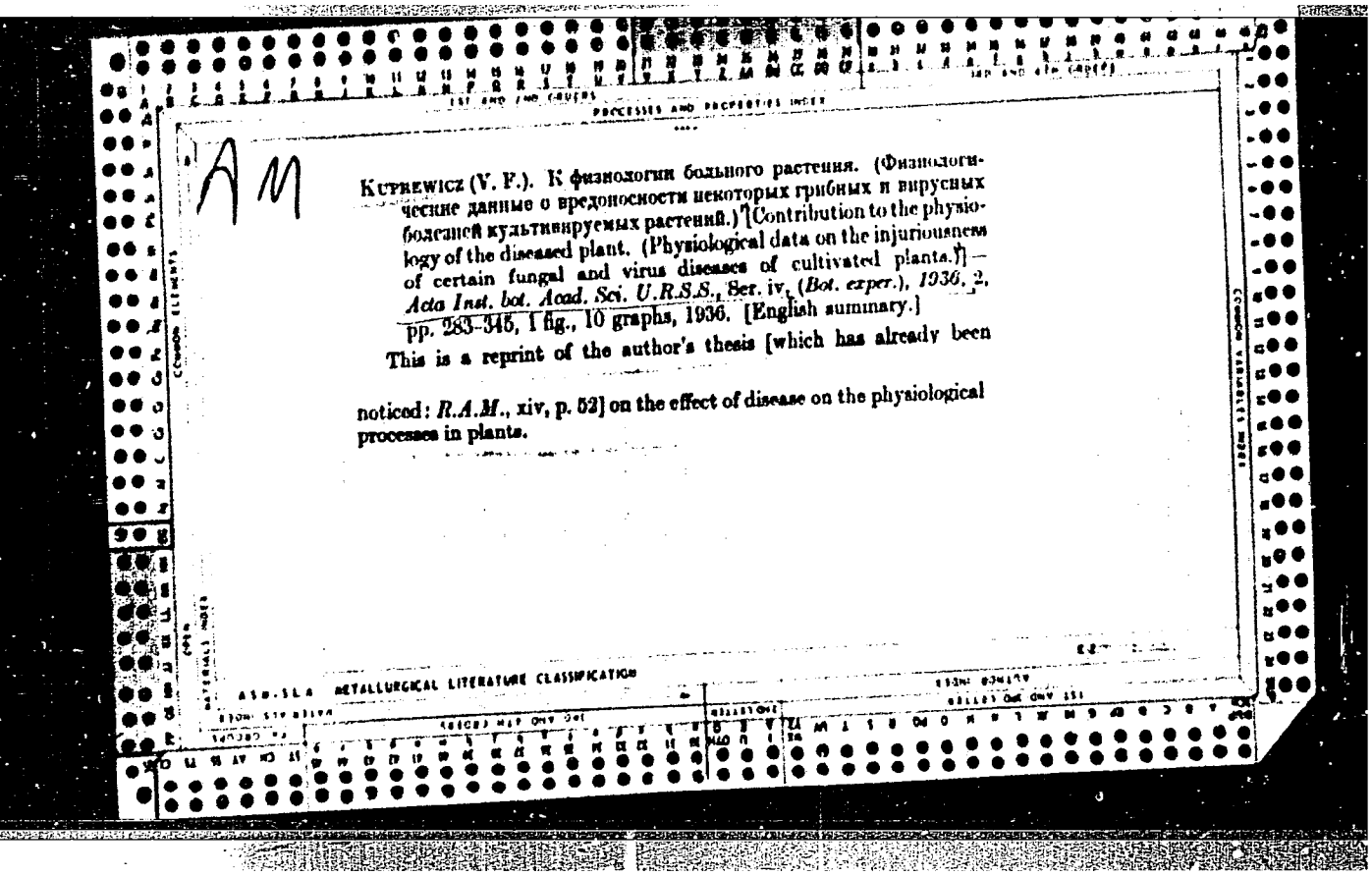
The author states that cross-inoculation experiments in 1933, carried out both in pots and in field plots, showed the existence in the region of Leningrad of two specialized forms of black blotch (*Dothidella trifolii*) [*R.A.M.*, xiv, p. 367] of clovers, inasmuch as ascospores collected on *Trifolium repens* were only able to infect their own host and to a somewhat lesser extent also *T. hybridum*, while ascospores from *T. medium* failed to infect both *T. repens* and *T. hybridum*, except in the greenhouse where a few plants of the last-named species proved susceptible, presumably owing to the exceptionally favourable environmental conditions. Attempts to infect *T. pratense* with ascospores of both forms gave negative results, and careful search in the region failed to reveal naturally infected plants of this species in the field. Inoculations with the spores of the conidial stage (*Polythrincium trifolii*) [loc. cit.] of the fungus invariably gave negative results.

Apart from the difference in pathogenicity, the two forms (for which the names ff. spp. *repentis* and *medii*, respectively, are suggested) also differ in the size and shape of their asci and ascospores, which measure 80 to 98 by 29 to 35 μ and 23 to 31 by 5 to 6 μ, respectively, in f. sp. *repentis*, as against 72 to 90 by 30 to 36 μ and 28 to 35 by 5 to 6·9 μ in f. sp. *medii*.

KUPREVICH, V. F.

KUPREVICH, V. F. "Brachy-form Genus of Puccinia Pers. (Uredinales) which Parasitizes Species of the Group--Anthemideae, Family Compositae," Trudy Botanicheskogo Instituta Akademii Nauk SSSR, Seriia 2: Sporovye Rastenilia, no. 2, 1935, pp. 377-410. 451 Sa21P

So: SIRA SI-90-53, 15 Dec. 1953



AM

KUPREWICZ (V. F.). К физиологии больного растения. (Физиологические данные о вредоносности некоторых грибных и вирусных болезней культивируемых растений.) [Contribution to the physiology of the diseased plant. (Physiological data on the injuriousness of certain fungal and virus diseases of cultivated plants.)] — *Acta Inst. bot. Acad. Sci. U.R.S.S.*, Ser. iv, (*Bot. exper.*), *1936*, 2, pp. 283–345, 1 fig., 10 graphs, 1936. [English summary.]

This is a reprint of the author's thesis [which has already been noticed: *R.A.M.*, xiv, p. 52] on the effect of disease on the physiological processes in plants.

KHRAPKOV, V. F.

KHRAPKOV, V. F. "The Physiological Characteristics of Potatoes Infected with Rugose Mosaic and Leaf Roll," in Virus Diseases of Plants, Collection 2, Publishing Affiliate of the All-Union Institute of Plant Protection, Moscow, 1938, p. 242. 464.32 V96 v.2

SO: SIRA SI-90-53, 15 Dec. 1953

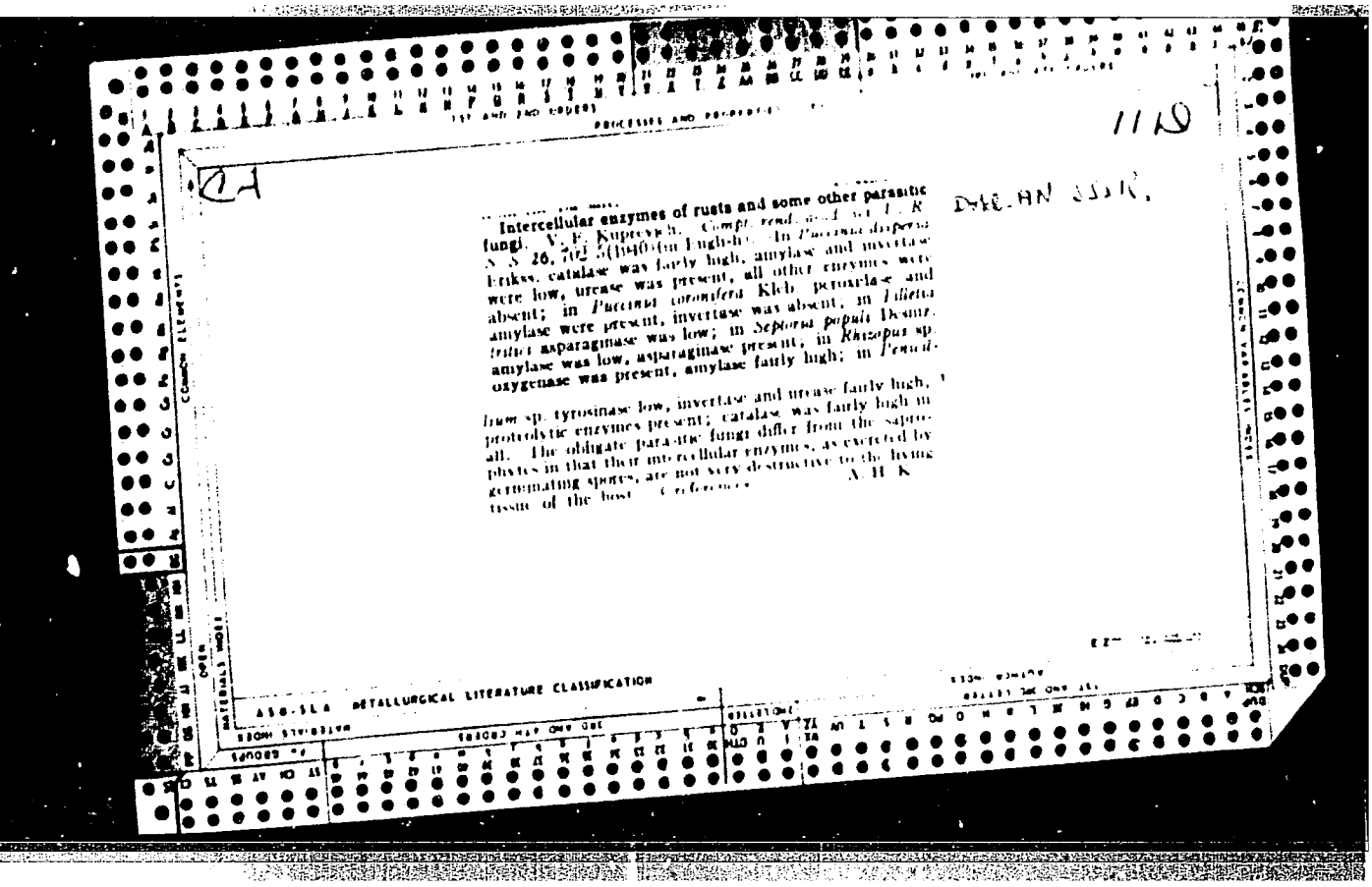
PROCESSES AND PROPERTIES INDEX

AM

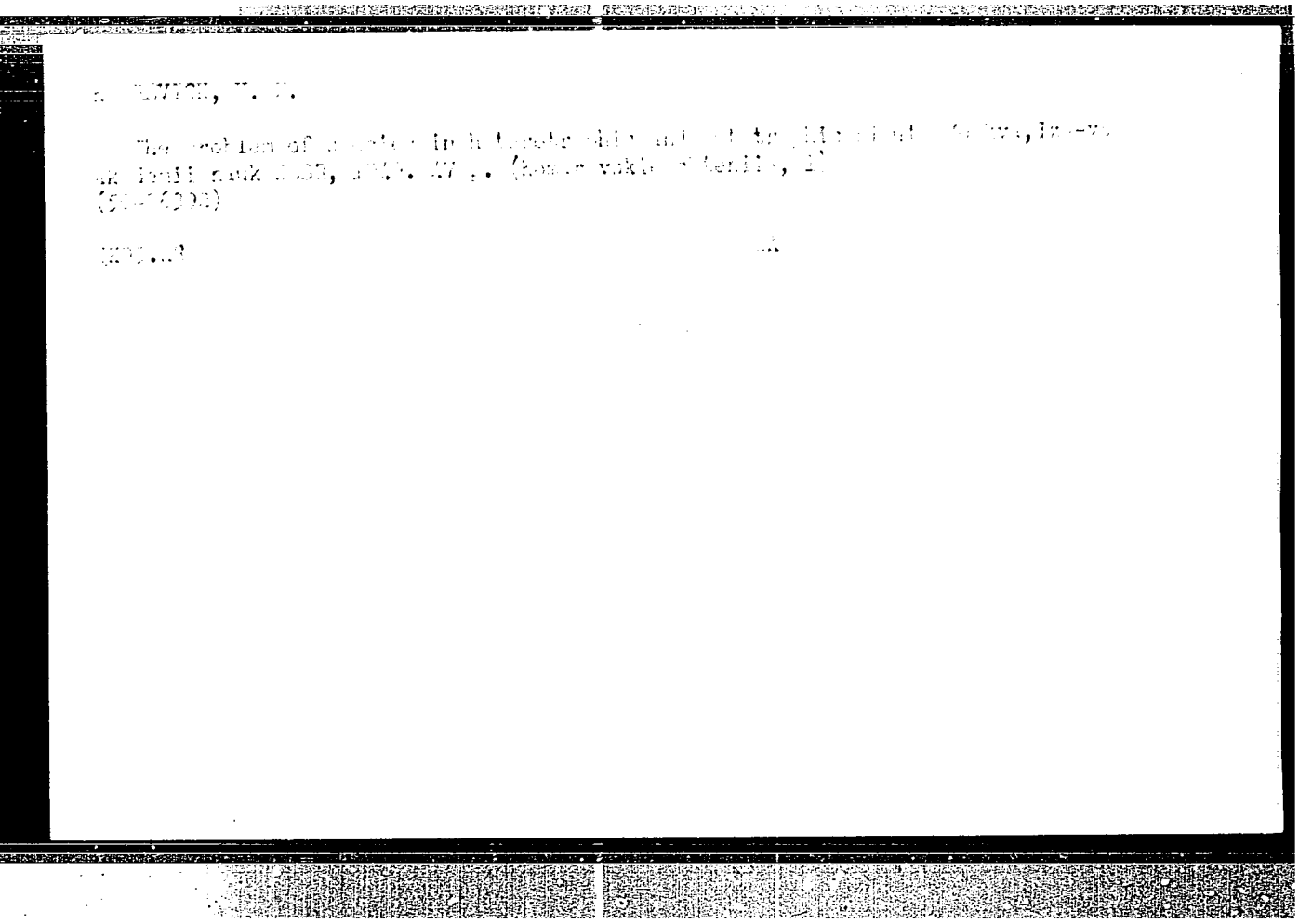
KUPREWICZ (V. F.) & KHILIMONOVA (Mme V. I.). К биологии листовой ржавчины Ржи **Puccinia dispersa Erikss.** [On the biology of leaf rust of Rye, *Puccinia dispersa* Erikss.]—*Sovetsk. Bot.*, 1939, 1, pp. 98–99, 1939.

The results of field investigations carried out from 1934 to 1936 in the Minsk district of the U.S.S.R. showed that uredospores of brown rust of rye (*Puccinia dispersa*) [*P. secalina*: *R.A.M.*, xiv, p. 292] can withstand a temperature of −26° C. under loose and dry snow, but perish when excessive soil moisture induces the formation of an ice cover. With the advent of the first warm days in spring the proportion of living uredospores is drastically reduced. Uredospores collected from under snow on 22nd January, 18th and 28th February, and 7th March gave 87 to 90, 44 to 48, 10, and about 0·1 per cent. germination, respectively, whereas in the case of uredospores on leaves frozen in the ice cover only those collected on the first date germinated up to 30 to 35 per cent., and none of those collected on later dates. No living spores were subsequently found till 5th May, when a few uredosori were observed on the dying leaves nearest to the ground [cf. ibid., xiii, p. 82].

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Intercellular enzymes of rusts and some other parasitic fungi. V. E. Kupcevich. *Compt. rend. Acad. Sci. U.R.S.S.* 26, 702-5(1940)(in English). In *Puccinia dispersa* Erikss. catalase was fairly high, amylase and invertase were low, urease was present, all other enzymes were absent; in *Puccinia coronifera* Kleb. peroxidase and amylase were present, invertase was absent, in *Uredo fruticola* asparaginase was low; in *Septoria populi* Desm. amylase was low, asparaginase present, in *Rhizopus* sp. oxygenase was present, amylase fairly high; in *Penicillium* sp. tyrosinase low, invertase and urease fairly high, proteolytic enzymes present; catalase was fairly high in all. The obligate parasitic fungi differ from the saprophytes in that their intercellular enzymes, as excreted by germinating spores, are not very destructive to the living tissue of the host. 6 references. A. H. K.

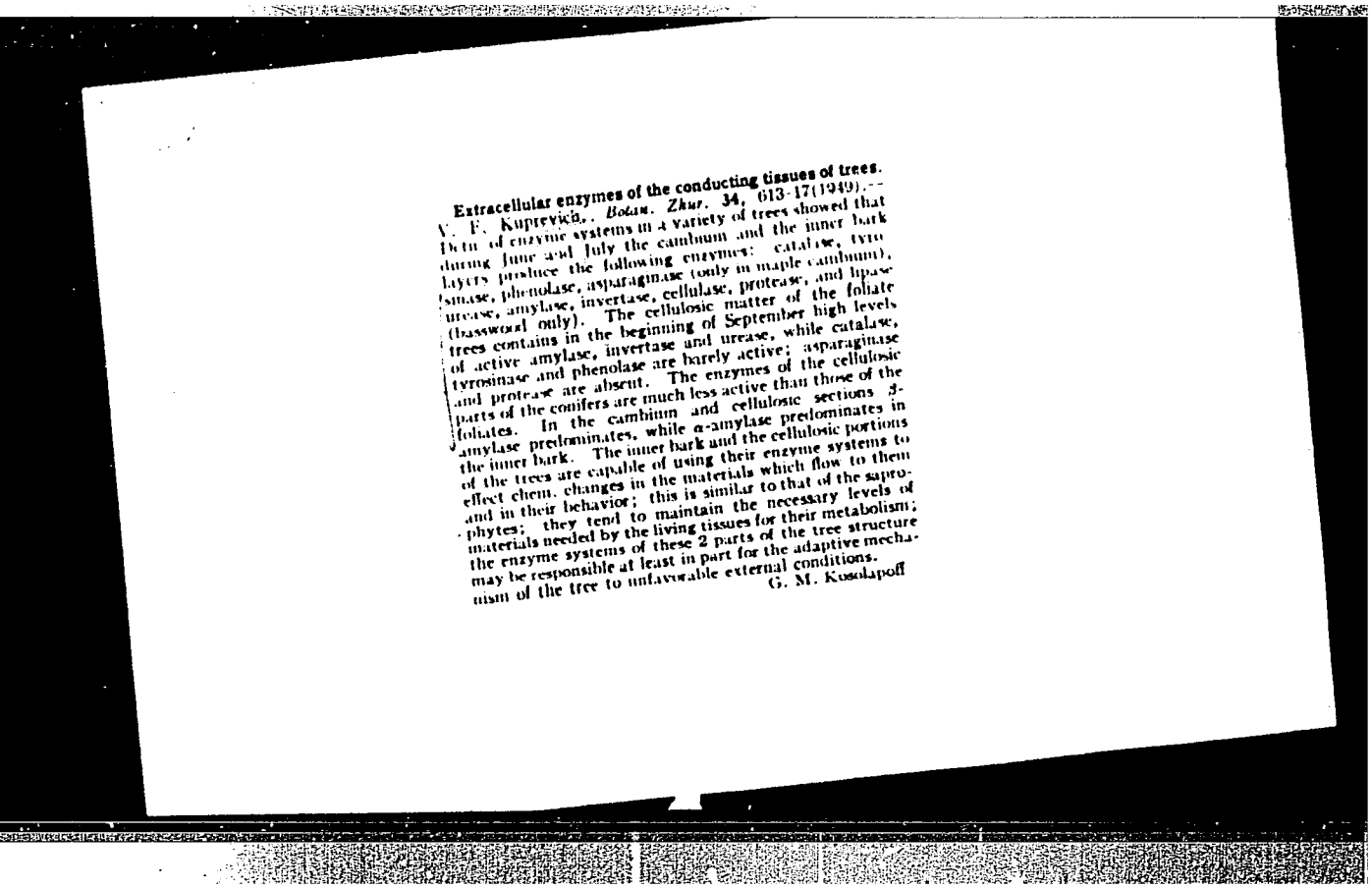


KUPREVICZ (V. F.). Физиология больного растения в связи с общими вопросами паразитизма. [The physiology of the diseased plant in relation to the general questions of parasitism.]—299 pp., 5 figs., 13 graphs, U.S.S.R. Academy of Sciences, Moscow-Leningrad, 1947. [Received November, 1949.]

This work comprises two parts, the first (pp. 1–100) dealing with the general features of parasitism, the physiology of fungal parasites, the parasite-host relationship, and also, briefly, with bacterial and virus diseases and physiological disorders. The second part contains the results of the author's further investigations into the physiology of diseased plants [R.A.M., 14, p. 52] preceded in each chapter by a comprehensive review of the literature. The additional hosts studied include potato infected with *Phytophthora infestans* and *Bacterium vesicatorium* [*Xanthomonas vesicatoria*], barley with *Ustilago nuda*, pedunculate oak with

Microsphaera alphitoides, oats with *Puccinia coronifera* [*P. coronata*], rye with *P. dispersa*, wheat with *P. triticina*, aspen and white poplar (*Populus tremula* and *P. alba*) with *Melampsora tremulae* and *M. populina*, respectively, black currant and pine with *Cronartium ribicola*, pistachio nut with *Septoria pistaciae*, a species of *Juniperus* with *Gymnosporangium fusisporum* (teleutospores), *Andropogon sorghum* [*Sorghum vulgare*] with *P. sorghi*, and *Psoralea drupacea* with *Leveillula taurica*. The virus diseases include potato rugose mosaic and streak [potato virus Y] and potato veinal mosaic (mild) [potato virus A], and rosette of ash (*Fraxinus americana*), a disease of unknown etiology, but probably of virus origin. This disease occurred in 1938 in ash plantings of the Central Botanical Gardens of the Academy of Sciences, Minsk, affecting 0·5 per cent. of 8-year-old trees. The diseased plants showed characteristic apical rosetting and were stunted, with a thin, usually bent stem. The leaflets were deformed, the margins often curled under, and in many cases covered with small, necrotic spots of various shapes. The root system was badly developed. Neither sap inoculation nor grafting transmitted the disease.

In chapter V on chlorophyll reductions the percentage of chlorophyll in pea plants affected by *Mycosphaerella pinodes* was reduced by 39 per cent., in oak infected with *Microsphaera alphitoides* by 10 to 48 per cent., according to the severity of infection, in poplar with *Melampsora tremulae* (36 per cent.), in *Cirsium arvense*



Extracellular enzymes of the conducting tissues of trees. V. F. Kuprevich. *Botan. Zhur.* 34, 613-17(1949).—Data of enzyme systems in a variety of trees showed that during June and July the cambium and the inner bark layers produce the following enzymes: catalase, tyrosinase, phenolase, asparaginase (only in maple cambium), urease, amylase, invertase, cellulase, protease, and lipase (basswood only). The cellulosic matter of the foliate trees contains in the beginning of September high levels of active amylase, invertase and urease, while catalase, tyrosinase and phenolase are barely active; asparaginase and protease are absent. The enzymes of the cellulosic parts of the conifers are much less active than those of the foliates. In the cambium and cellulosic sections of the inner bark. The inner bark and the cellulosic portions of the trees are capable of using their enzyme systems to effect chem. changes in the materials which flow to them and in their behavior; this is similar to that of the saprophytes; they tend to maintain the necessary levels of materials needed by the living tissues for their metabolism; the enzyme systems of these 2 parts of the tree structure may be responsible at least in part for the adaptive mechanism of the tree to unfavorable external conditions.

G. M. Kosolapoff

USSR/Biology - Botany 11 Oct 49
Plants

"Extracellular Ferments of the Roots of Higher Autotrophic Plants," V. F. Kuprevich, Bot Inst imeni Komarov, Acad Sci USSR, 3½ pp

"Dok Ak Nauk SSSR" Vol LXVIII, No 5

From studies of 23 varieties of 16 plant families, Kuprevich concludes: Extracellular root ferments (catalase, tyrosenase, and other ferments) have active effect on certain substrata. Mycorrhiza generally increased this activity. These ferments in higher plant rootlets differ little from

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USSR/Biology - Botany (Contd) 11 Oct 49

ferments in saprophytic fungi. Action of certain ferments facilitates feeding the upper plants through organic substances, e.g., manures. Direct contact of surfaces of root tissue and the substratum is necessary. Typical "heterotrophic" collection of these ferments, as a primary alimentary procedure, is universal in the plant world. Submitted by Acad V. N. Sukachev 5 Aug 49

(BA - A III Ja 13:92)

151T4

KUPREVICH, V.F.

The species as a stage of evolution in heterotrophic and autotrophic plants. Probl.bot. no.1:149-162 '50. (MLRA 8:11)
(Plants--Evolution)

Rev. Applied Mycology KUPREVICH, V. F.
U-32 Dec 1953

/

/ Kuprevich (V. F.). Новые виды ржавчинных грибов из Таджикистана. [New species of rust fungi from Tadzhikistan.] Бот. Матер. (*Not. syst. Sect. crypt. Inst. bot. Acad. Sci. U.S.S.R.*), 6, 7–12, pp. 169–172, 1950.

Included among the five new species of rust fungi collected in Tadzhikistan, U.S.S.R., in 1941–5 is *Puccinia rhamni* n.sp., which was found on living leaves of *Rhamnus dolichophylla*. It differs from *P. mesnieriana* in the presence of aecidia, which were on the lower side of the leaf as in *P. coronata* [*R.A.M.*, 31, p. 430] and in the form of the teleutospores, which measured 36 to 66 by 15 to 21 μ, and possessed a thickened apex (5 to 7 μ) with one to four digitiform projections attaining 9 μ in length.

KUPREVICH, V. F.

"The V. L. Komarov Institute of Botanics of the Soviet Academy of Sciences" (Research Program)

Biologicheskiy Zhurnal, No 5, 1951

USSR

The biological activity of soils and methods for its determination. V. F. Kuprevich. *Doklady Akad. Nauk S.S.S.R.* 79, 863 (1951).—It was shown that catalase, invertase, and urease are present in various soil samples and catalase and urease were present in washed river sand from under barley culture. Other ferments were also found to be present, viz., amylase, protease, asparaginase, phenolase, and tyrosinase. The biol. activity of the ferments was detd. for various soil samples. The activity is expressed as follows: for catalase—in cc. of O (or ml. of 0.1*N* $KMnO_4$) per min. at 20° per cc. of soil; for invertase—amt. of inverted sugar in mg. formed in 1 hr. at 30° per cc. of soil; for urease—the amt. of urea (in mg.) decompd. per hr. The activity of the ferments differs in different soils. I. R. L.

62

KUPREVICH, V. F.

"The Physiology of Diseased Plants in Connection with General Questions of Parasitic Growth"

Vestnik Akademii Nauk SSSR, No 1, Jan 1952, pp80-81
U-3753

KUPREVICH, V. F.

"Virus Diseases of Potatoes"

Vestnik Akademii Nauk SSSR, No 1, Jan 1952, pp80-81
U-3753

KUPREVICH, V. F.

"Problems and Methods of Research on the Diseases of Agricultural Plants"

Vestnik Akademii Nauk SSSR, No 1, Jan 1952, pp80-81
U-3753

KUPREVICH, V. F.

"The Parasites of Grasses"

Vestnik Akademii Nauk SSSR, No 1, Jan 1952, pp80-81
U-3753

KUPREVICH, V. F.

"The Factor of Parasitic Muchrooms in Feeder Plants of Flora in the Belorussian SSR"

Vestnik Akademii Nauk SSSR, No 1, Jan 1952, pp80-81
U-3753

KUPREVICH, V. F.

"Plant Diseases of Kondar Ravine," (An Experiment in Biological Monography), 1951.

Mikrobiol.,Vol. 21, No 1, pp 121-132, 1952

1. KUPREVICH, V. F., Prof.

2. USSR (600)

4. Science - White Russia

7. Work of scientists of Soviet White Russia, Priroda, 41, No. 11, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953, Unclassified.

KUPREVICH, V.F.; LITVINOV, M.A.; MOISEYEVA, Ye.N.; RASSADINA, K.A.; SAVICH, V.P.

Lichens as a source of antibiotics. Trudy Bot.inst. Ser.2 no.8: 327-356 '53. (MLRA 7:1)

(Lichens) (Antibiotics)

Diseases of clover and alfalfa; classification manual Moskva, Akad. nauk SSSR, 1954. 179 p.

Куфевич, В.Ф.

BARANOV, P.A., redaktor; GENKEL', P.A., redaktor; KUPREVICH, V.F., redaktor; LAVRENKO, E.M., redaktor; SOCHAVA, V.B., redaktor; SUKACHEV, V.N., redaktor; TIKHOMIROV, B.A., redaktor; SHISHKIN, B.K., redaktor; ZALENSKIY, O.V., redaktor.

[Problems in botany] Voprosy botaniki. Moskva, Izd-vo Akademii nauk SSSR. Vol. 1-2. 1954. 904 p. [In Russian and French] (MLRA 7:11)

1. Vsesoyuznoye botanicheskoye obshchestvo.
(Botany)

KUPREVICH, V. F.

USSR/Agriculture

Card 1/1

Authors : Kuprevich, V. F.

Title : Facing New Problems

Periodical : Vest. AN SSSR, Ed. 2, 27-38, Feb/1954

Abstract : The editorial reports on the directives adopted by the XIX Congress of the All-Union Communist Party, which include the provisions for further increase in production and development of heavy and light industries and agriculture in the White Russian SSR. The editorial mentions that at the present time, there are, in the White Russian SSR, 17 scientific investigational institutes, 6 testing stations, a botanical garden and a museum of literature and that, 9 new institutes are being formed to satisfy the growing requirements of agriculture.

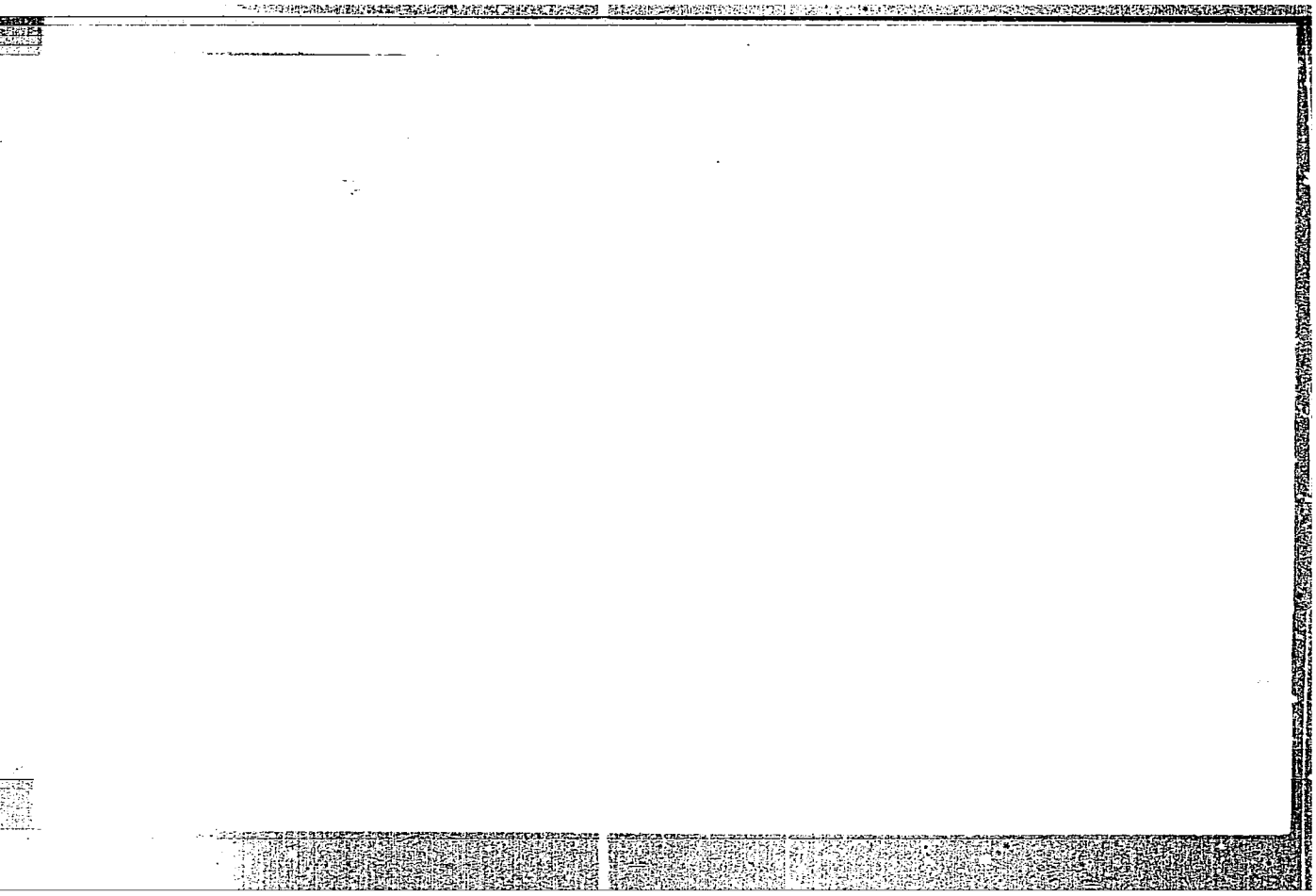
Institution : President, AS Belo SSR

Submitted : .....

SHISHKIN,B K., redaktor; KUPREVICH, V.F., redaktor; LARIN, I.V.zasluzh. deyat. nauki. prof; redaktor;VASIL'CHENKO, I.T., professor, doktor biologicheskikh nauk, redaktor; GOLOVNIN, M.I., redaktor; MOLODTSOVA, N.G., tekhnicheskiy redaktor.

[Proceedings of the First All-Union Conference of Botanists and Plant Breeders, March 24-27, 1950] Materialy Pervogo Vsesoiuznogo Soveshchaniia botanikov i selektsionerov 24-27 marta 1950 g. Redaktsionnaia komissia: B.K. Shishkin, i dr. Moskva, Izd-vo Akademii nauk SSSR. Vol. 3. 1954. 119 p. (MLRA 8:7)

1. Chlen-korrespondenty AN SSSR (for Shishkin, Kuprevich)
(Botany--Congresses)



APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000927610009-7"

TOMIN, M.P.; KUPREVICH, V.F., akademik, redaktor; BULAT, O., redakter izdatel'stva; ALEKSANDROVICH, Kh., tekhnicheskiy redakter.

[Classification of crustase lichens of the European Russia; excluding the Far North and the Crimea] Opredelitel' korkovykh lishainikov Evropeiskoi chasti SSSR; krome Krainego Severa i Kryma. Minsk, Izd-vo Akad.nauk Belorusskoi SSR, 1956. 531 p. (MLRA 10:4)

1. Chlen-korrespondent Akademii nauk Belorusskoy SSR (for Tomin)
2. Akademiya nauk Belorusskoy SSR.(for Kuprevich)
(Lichens)

USSR / Microbiology. Antibiosis and Symbiosis. Antibiotics F-2

Abs Jour : Ref Zhur - Biol., No 1, 1958, No 635

Author : Savich, V.P., Kuprevich, V.F., Litvinov, M.A., Moiseeva, E.N. Rassadina, K.A.

Inst : Not Given

Title : On a New Antibiotic From Lichens, the Sodium Salt of Usninic Acid

Orig Pub : Tr. Botan. Inst-ta AN SSSR, ser. 2, 1956, No 11, 5-37

Abstract : In the study of antibiotic activity of lichens in the USSR, 11 species were found which contain usninic acid(I) in quantities large enough for industrial use. Data are given as to prevalence and content of I in specimens of Cladonia, Usnea, Cetraria, Alectoria, Parmelia, Evernia families. Specimens of 5 species yield a levorotary form of I, while the other 6 yield a dextrorotary isomer. The formation of I by some species was established for the first time. The method of collecting the raw material is stated. The authors' modified, more precise method of obtaining I is described, based on extracting the lichen thallus with benzene. The sodium salt

Card : 1/2

USSR / Microbiology. Antibiosis and Symbiosis. Antibiotics F-2

Abs Jour : Ref Zhur - Biol., No 1, 1958, No 635

of I can be obtained by treating I with sodium bicarbonate or carbonate in an alcoholic medium. The sodium slat of I in dilutions of 1:16,000,000 - 1:65,000,000 inhibits diphtheria bacteria; 1:5,000,000 -- tubereulax bacilli, strain $H_{37}Rv$; 1:200,000 - 1:1,500,000 -- hay bacillus, potato bacillus, Bacillus mycoides, aureus and albus staphylococci, pneumococci, wound anaerobes and others. It also manifests a bactericidal action in stronger concentrations. It depresses the simplest and does not affect gramnegative bacteria and fungi. Its antibacterial action is markedly diminished in the presence of blood serum.

The results of clinical tests justify the possibility of the use of the sodium salt in surgery, gynecology, and also in veterinary practice. It is permitted for release in medical practice under the name of "sodium salt of usninic acid."

Card : 2/2

KUPREVICH, V.F.

Methods for determining invertase and catalase activity of a soil. Vestsi AN BSSR Ser.biial.nav.no.2:115-116 '56. (MLRA 10:1)
(Invertase) (Catalase) (Soil chemistry)

: USSR

: Plant Diseases. General Problems. 0

: RZhBiol., No. 14,1958. No. 63663

: Kudrevich, V.F., Shcherbakova, T.I.

: Institute of Biology, Academy of Sciences, Belorussian SSR

: Effect of Autolytic Mixtures on the Germination of the Spores of Rust and Smut Fungi.

: Sb. tr. In-ta biol. AN BSSR, vyp. 2, 1956 (1957), 161-164

: Behavior was investigated of living urediospores of Puccinia coronifera Kleb., P. malvacearum Mont. and of the spores of Ustilago avenae (Pers.) Jensen in autolysates of the tissues of their usual hosts and other plants, healthy and infected. Used were the leaves of oats at blossoming stage, leaves of alkaloidal blue lupine, healthy and those infected with Erysiphe communis Grev. forma lupini Roum.; leaves near the roots of Taraxacum officinale Wigg., healthy and those infected with Erysiphe sp.; leaves of Malva perenne, healthy and those infected with P. malva-

: USSR

: Plant Diseases. General Problems. 0

: RZhBiol., No. 14, 1958. No. 63663

: ...cerum. 250 milligrams of fresh leaves were ground in 5 cubic centimeters of distilled water in a mortar. Part of the filtrate was left in fresh form, the other was heated until boiling. Drops of the filtrate were applied on the slides where the living spores of the fungi were placed. The slides were kept at 20° in Petri dishes on filter paper moistened in water. After 20-24 hours, the drops were examined in the microscope. The raw autolysates more or less retarded the germination of urediospores. As a rule, an extract from the infected tissue (except lupine) produced a less

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[illegible]	:	
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[illegible]	:	
ABSTRACT	: appreciable retarding effect. Urocoperan of P. calyceanum germinated better in extracts from the tissues of the feeding plant. The behavior of the spores of U. evenae clearly indicates the stimulating action of any extract, including an extract of fly agaric (Amanita muscaria). -- G.A. Dyakova	

Card: 3/3

KUPRNVICH, V.F.; CHIGRINOV, I., red.izd-va; ALEKSANDROVICH, Kh., tekhn.red.

[Academy of Sciences of White Russia; a historical acount] Akademiia nauk Belorusskoi SSR; istoricheskii ocherk. Minsk, Izd-vo AN BSSR, 1957. 150 p. (MIRA 11:5)
(Academy of Sciences of White Russian S.S.R.)

KUPREVICH, V.F.; TRANSHEL', V.G.[deceased]; SAVICH, V.P., professor, doktor biologicheskikh nauk, zasluzhennyy deyatel' nauk RSFSR, otvetstvennyy redaktor; ZENDEL', R.Ye., tekhnicheskiy redaktor

[Sporophytes of U.S.S.R.] Flora sporovykh rasteniĭ SSSR. Moskva. Vol. 4.[Fungi] Griby. Pt. 1.[Uredinales] Rzhavchinnye griby. No.1. [Melampsoraceae] Sem. Melampsorovye. 1957. 419 p. (MLRA 10:5)

1. Akademiya nauk SSSR.
(Melampsoraceae)

KUPREVICH, V.F.; SHCHERBAKOVA, T.A.

Effect of autolytic mixtures on the spore germination of rust and smut fungi. Biul. Inst. biol. AN BSSR no.2:161-164 '57. (MIRA 11:2)
(Uredineae) (Ustilagineae) (Growth inhibiting substances)

KUPREVICH, V.F.

International conference on the use of radioisotopes in scientific research. Vestsi AN BSSR. Ser. biial. nav. no.4:151-160 '57. (MIRA 11:6)

(PARIS--RADIOISOTOPES--CONGRESSES)

SUBJECT: USSR/Activities of the Belorussian Scientists 25-6-6/46

AUTHOR: Kuprevich, V.F., President of the Academy of Sciences of the Belorussian SSR

TITLE: Investigations by Belorussian Scientists (Issledovaniya uchenykh Belorussii)

PERIODICAL: Nauka i Zhizn' - June 1957, # 6, p 14 (USSR)

ABSTRACT: The Belorussian Academy of Sciences was founded over 25 years ago. At present it comprises 14 institutes and 100 laboratories. As Belorussiya has more than 2 million hectares of peat bogs with billions of tons of peat, scientists are concentrating on problems of complex utilization of peat for the benefit of the national economy of the Republic. The electric power institute, for example, has developed products for the reconstruction of existing thermal power plants in order ot achieve a technological utilization of peat. The monograph "Peat Deposits in the Byelorussian SSR" contains the results of many years of research work performed by the Peat Institute.

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25-6-6/46

TITLE: Investigations by Belorussian Scientists (Issledovaniya uchenykh Belorussii)

ASSOCIATION:

PRESENTED BY:

SUBMITTED:

AVAILABLE: At the Library of Congress

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KUPREVICH, V. F.

AUTHORS: Kuprevich, V. F., Corresponding Member AN SSSR, 20-6-24/48
Moiseyeva, Ie. N.

TITLE: Extracellular Enzymes of Lichens (Vnekletochnyye fermenty lishay-nikov).

PERIODICAL: Doklady AN SSSR, 1957, Vol. 115, Nr 6, pp. 1138-1141 (USSR.).

ABSTRACT: As sources of valuable antibiotics the lichens recently became very important. Their effective substances, the "lichenic acids", are highly stable and conserve their antimicrobic properties for 3 decades. The content of lichenic acids varies in individual types of lichens according to the conditions of existence of the lichens and is connected with the physiological activity of the thallus. The enzymatic apparatus of the lichens has, with the exception of accidental observations, hitherto been uninvestigated. Lichens of the Leningrad region and of the Karelian Isthmus were used for the investigation. Figure 1 shows the influence of the lichen-thallus on a 1% starch solution in gelatin. In a considerable region around the thallus the starch is absent due to the influence exerted by the amylase of the lichen. The determined data of the enzymatic activity are recorded in table 1. Amylase, invertase, cellulase, lichenase, tannase, lipase, urease, asparaginase, zymase, catalase and pheno-

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lase were examined in 7 types of lichens. Beside the above-mentioned enzymes the activity of protease, oxidase, peroxidase and thyrosinase were also determined. Their activity either manifested itself not at all or very weakly. The absence of proteases had not been expected. At all events, the method based on the reaction of amino acids with ninhydrin is not suitable for investigating the activity of proteases. A wide selection of extracellular enzymes which is analogous to that of saprophytic fungi indicates the possibility of an active reaction of the thallus on the substrate (figure 1). No doubt the lichens, like the true saprophytes, do not take water alone from the substrate, but also a number of organic substances as a source of nutriment. The current conception of the purely autotrophic nutrition of the lichens does not agree with reality. The active part played by extracellular enzymes is also confirmed by the specialization of the enzymatic apparatus according to the substrate. Thus all lichens settling on trees or on ground dispose of a more or less active cellulase (exception: Umbilicaria pustulata of granite). Parmelia physodes - lichens from birch and Scotch pine differ according to their activity of amylase. This corresponds to the peculiarity of the distribution of starch in deciduous and coniferous forests. A wide distribution of amylase, lichenase and some other enzymes in

Extracellular Enzymes of Lichens. 20-6-24/48

lichens cannot only be explained by hereditary phenomena. Their presence is evidence of a correspondingly wide distribution of starch, saccharose and other substrates at the habitat. There are 1 figure, 1 table and 2 Slavic references.

ASSOCIATION: Botanical Institute AN USSR imeni V. L. Komarov (Botanicheskiy institut imeni V. L. Komarova Akademii nauk SSSR.).

SUBMITTED: April 9, 1957.

AVAILABLE: Library of Congress.

Card 3/3

KUPREVICH, V.F.

MALININ, S.N., dotsent, kand.ekon.nauk, otv.red.; LUPINOVICH, I.S., doktor sel'skokhoz.nauk, akademik, zamestitel' otv.red.; URUSOV, V.V., otv.red. po vypusku; LUKASHEV, K.I., doktor geologo-mineral.nauk, akademik, red.; AVKSENT'YEV, A.N., kand.geologo-mineral.nauk, red.; ROGOVOY, P.P., doktor sel'skokhoz.nauk, akademik, red. Sostaviteli kart: BOBYLEVA, Ye.A.; VOLKOVA, V.V.; VORONTSOVA, G.V.; MARKOVA, N.T.; TIKHONRAVOVA, Ye.V.. IL'YUSHIN, I.M., kand.filosof.nauk, red.kart; KRAVCHENKO, I.S., kand.istor.nauk, red.kart; KUPREVICH, V.F., doktor biolog.nauk, akademik, red.kart; BURZGAL, T.S., red.-kartograf; GULYUK, G.I., red.-kartograf; LEVSHINOV, A.O., red.-kartograf; RUTKOVSKAYA, M.S., red.-kartograf; SVIRSKIY, A.S., red.-kartograf

[Atlas of the White Russian Soviet Socialist Republic] Atlas Belorusskoy Sovetskoy Sotsialisticheskoy Respubliki. Minsk, Akad.nauk BSSR. Glav.upr.geodez. i kartografii MVD SSSR, 1958. XIV, 140 maps. (MIRA 12:4)

1. Predsedatel' Gosplana BSSR (for Malinin). 2. AN BSSR; prezident Akademii sel'skokhoz.nauk BSSR (for Lupinovich). 3. Direktor Minskoy kartograficheskoy fabriki (for Urusov). 4. AN BSSR; vitse-prezident AN BSSR (for Lukashev). 5. AN BSSR (for Rogovoy). 6. Chlen-korrespondent AN BSSR (for Il'yushin). 7. AN BSSR; chlen-korrespondent AN SSSR; prezident AN BSSR (for Kuprevich).

(White Russia--Maps)

AS KUPREVICH, V. F.

262 Akademiya Navuk Belaruskay SSR; Narys Historyi I
.B45 Dzeynasshch (The Belorussian Academy of Sciences; A Short History)
K9 Minsk, Vyd-Va Akademii Navuk BSSR, 1958

274, (1) P. Illus. Ports.

"Literatura I Materyyaly P. 273 (275)

KUPREVICH, V.F., glavnyy red.; ATRAKHOVICH, K.K., red.; LUKASHOV, K.I. [Lukashou, K.I.], red.; YARMOLENKO, M.F. [Iarmolenka, M.F.], red.; NESTSYAROVICH, M.D., red.; GLEBKO, P.F. [Hlebka, P.F.], red.; SUDNIK, M.R., red.; PERTSOV, U.M. [Pertsau, U.M.], red.; VINOKUROV, F.P. [Vinakurau, F.P.], red.; BYAL'KEVICH, P.I., red.; VALAKHANOVICH, I., tekhn.red.

[Science in White Russia during 40 years] Navuka u Belaruskai SSSR za 40 hod. Minsk, Vyd-va Akad.navuk BSSR, 1958. 475 p. (MIRA 12:3)

1. Akademiya navuk BSSR, Minsk.
(White Russia--Science)

KUPREVICH, V.F.

Problems in soil enzymology. Vest. AN SSSR 28 no.4:52-57 Ap '58.
(MIRA 11:5)

1. Chlen-korrespondent AN SSSR.
(Soil biology) (Enzymes)

KUPREVICH, V. F.

"Physiology of the Diseased Plant."
Paper submitted for the Int'l Botanical Congress, Montreal, Canada, 19-29 Aug 1959

L'Academie des Sciences de la R.S.S. de Bielorussie, Minsk, U.S.S.R.

KUPREVICH, V.F.

The great scientist - biologist; on the 150th anniversary of Charles Darwin's birth. Vestsi AN BSSR. Ser. biial. nav. no.1: 5-10 '59. (MIRA 12:7)
(Darwin, Charles Robert, 1809-1882)

SOV/26-59-1-8/34

AUTHOR: Kuprevich, V.F., Associate Member of the AS UkSR; President.

TITLE: The Contribution of Belorussian Scientists (Vklad belorusskikh uchënykh)

PERIODICAL: Priroda, 1959, Nr 1, pp 20-22 (USSR)

ABSTRACT: The author points out that the AS of the Belorussian SSR was able to establish and expand its scientific research institutes very soon after the Second World War and to equip them with devices of latest design. Theoretical problems of physics, mathematics, chemistry, biology and other sciences will be the specific domains of scientific activity in the new Seven-Year Plan period. The solution to 125 problems (60 of these in cooperation with the AS's of the USSR and other republics) has been taken up by the Belorussian AS. The utilization of peat, melioration of the Poles'ye Depression (in cooperation with institutes of the Ukrainian and Lithuanian AS's), and the study of the Belorussian fauna and flora, in addition to some other missions, will be special contributions of the Belorussian

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The Contribution of Belorussian Scientists

AS. While the construction of the block of laboratories of the institutes of physics and mathematics, chemistry, and energetics will be accomplished very soon, construction of the block of physico-technical, machine-engineering, human-physiology, and other institutes is projected. There is 1 photograph.

ASSOCIATION: Akademiya nauk Belorusskoy SSR, Minsk (The AS of the Belorussian SSR, Minsk)

Card 2/2

KUPREVICH, V.F.

Second international conference of the UNO on the use of atomic energy for peaceful purposes. Vestsi AN BSSR, Ser. fiz.-tekh. nav. no.1:87-92 '59. (MIRA 12:6)
(Geneva--Atomic energy--Congresses)

17(3)

SOV/20-126-3-61/69

AUTHORS: Kuprevich, V. F., Corresponding Member AS USSR, Gollerbakh, M. M., Moiseyeva, Ye. N., Savich, V. P., Shcherbakova, T.A.

TITLE: Some Data on the Biological Activity of the Subsoils, Soils and Lichens in the East Antarctic (Nekotoryye dannyye o biologicheskoy aktivnosti gruntov, pochv i lishaynikov Vostochnoy Antarktidy)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 3, pp 678-681 (USSR)

ABSTRACT: The material for the present paper was collected by M. M. Gollerbakh in the Antarctic in January-March 1957 within the Continental Department of the Sovetskaya antarkticheskaya ekspeditsiya (Soviet Antarctic Expedition). The vegetation in the Antarctic is very peculiar and mainly consists of algae, lichens and moss. The living conditions of these plants are also peculiar and extraordinarily hard. The clarification of the degree of viability of these plants and of the intensity of their biological effect is therefore of considerable interest. One of the simplest and most practical methods of determining the biological total activity of the soil is the determination of the ferments contained in it (Refs 1, 2). The material was collected in the area of the principal base of the mentioned

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expedition - the Mirnyy settlement. In the samples of the subsoils and soils, the activity of the catalase and invertase (method Ref 3) was determined in air-dry state. A considerable activity of both ferments was ascertained in fine earths more or less rich in algae (Table 1). These results lead to the conclusion that the soil-forming processes in the Antarctic are only possible on the basis of sufficient accumulation of organic substances, which are present in the excrements of seabirds. The organic substances which produce the plants are insufficient for this purpose because they are decomposed and weathered at a faster rate than the accumulation process can supply them. 2 kinds of lichens were investigated for composition and activity of ferments: Neuropogon antarcticus (DR.) Savicz and N. sulphureus (Koenig) Elenk. (family of Usneaceae) from the island of Khasuell. The ferment activity proved to be rather considerable. Table 2 shows this for inter- and intracellular ferments. The differences in activity must be attributed to properties of peculiar kinds. Both kinds are very similar to those of the species Usnea in the north of the USSR with respect to the presence of ferments, but the activity is higher

than there. Therefore, the conclusion can be made that the lichens investigated possess sufficient biological activity under the most severe conditions of the Antarctic. This activity ensures a regular course of processes of life, the formation and accumulation of the chemical substances peculiar to them. Other investigations are necessary for further generalizations. There are 2 figures and 4 Soviet references.

ASSOCIATION: Botanicheskiy institut im. V. L. Komarova Akademii nauk SSSR (Botanical Institute imeni V. L. Komarov of the Academy of Sciences, USSR) Laboratoriya fiziologii i sistematiki nizshikh rasteniy Akademii nauk SSSR (Laboratory for Physiology and Systematics of Inferior Plants of the Academy of Sciences, USSR)

SUBMITTED: March 26, 1959

KUPREVICH, V.F.; SHCHERBAKOVA, T.A.

Are enzymes produced when a specific substrate is lacking?
Dokl.AN BSSR 4 no. 11:478-481 N '60. (MIRA 13:12)

1. Laboratoriya fiziologii i sistematiki nizshikh rasteniy Akademii nauk BSSR.
(Enzymes) (Fungi)

KUR[illegible]ICH, V.F.; SHC[illegible]VAKOVA, T.[illegible]

[illegible] activity in [illegible] infection. Dokl.[illegible] 4 no.12:532-535 D '60. (MIRA [illegible])

1. Laboratoriya sistematiki [illegible] nizshikh [illegible] AN SSSR.
(Plants--Disease [illegible] resistance)

KUPREVICH, V.F.; SHCHERBAKOVA, T.A.

Determining the proteolytic activity of the soil. Dokl. AN BSSR 5 no.3 Mr'61. (MIRA 14:3)

1. Otdel fiziologii i sistematiki nizshikh rasteniy AN BSSR
(Soil chemistry) (Protease)

KUPREVICH, V.F.; SHCHERBAKOVA, T.A.

Proteolitic activity of peat soils. Dokl. AN BSSR 5 no.12:579-581 D '61. (MIRA 15:1)

1. Laboratoriya fiziologii i sistematiki nizshikh rasteniy AN BSSR.
(PROTEASE) (PEAT SOILS)